

U.S. Patent Application Serial No. 09/752,939  
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### AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An oxygen-delivery matrix, comprising, a biocompatible, single unit construct matrix, comprising a polymer network, ~~a non-gellable polysaccharide, and multiple closed cells comprising enriched concentrations of oxygen~~, wherein the oxygen is generated in the matrix in the manufacture of the matrix, ~~creating multiple oxygen-rich, closed cells within the matrix;~~

and wherein the ~~closed cells non-gellable polysaccharide and oxygen~~ are dispersed throughout the polymer network at sites where a catalyst was entrapped in the matrix.

2. (Original) The matrix of Claim 1, further comprising at least one active agent.

3. (Original) The matrix of Claim 1, wherein the biocompatible matrix comprises polyacrylamide.

4. (Currently Amended) The matrix of Claim 1, wherein the matrix further comprises a non-gellable polysaccharide is guar-gum.

5. (Canceled)

6. (Currently Amended) The matrix of Claim 1, wherein the generation ~~Claim 5, wherein the in-situ~~ production of oxygen results from the decomposition of a peroxide.

7. (Currently Amended) The matrix of Claim 6, wherein the decomposition of the peroxide is caused by a the catalyst.

8. (Currently Amended) The matrix of Claim 1 7, wherein the catalyst is a carbonate salt.

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9. (Currently Amended) The matrix of Claim 17, wherein the catalyst is a salt of iodide, manganese dioxide or cupric chloride.

10. (Currently Amended) The matrix of Claim 17, wherein the catalyst is an enzyme, such as catalase.

11. (Canceled)

12. (Previously Presented) The matrix of Claim 1, wherein the polymer network comprises a natural or synthetic polymer.

13-20. (Cancelled)

21. (Currently Amended) The matrix of Claim 2, wherein the active agent comprises gases, anti-microbial agents, anti-fungal agents, anti-bacterial agents, anti-viral agents, anti-parasitic agents, mycoplasma treatments, growth factors, proteins, nucleic acids, angiogenic factors, anesthetics, mucopolysaccharides, metals, pharmaceuticals, chemotherapeutic agents, herbicides, growth inhibitors, anti-fungal agents, anti-bacterial agents, anti-viral agents and anti-parasitic agents, wound healing agents, growth promoters, indicators of change in the environment, enzymes, nutrients, vitamins, minerals, carbohydrates, fats, fatty acids, nucleosides, nucleotides, amino acids, sera, antibodies and fragments thereof, lectins, immune stimulants, immune suppressors, coagulation factors, neurochemicals, cellular receptors, antigens, adjuvants or and radioactive materials.

22. (Currently Amended) The matrix of Claim 21, wherein the gases comprise ~~oxygen~~, nitrogen, carbon dioxide, and noble gases.

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23. (Currently Amended) The matrix of Claim 21, wherein the antimicrobial agent comprises isoniazid, ethambutol, pyrazinamide, streptomycin, clofazimine, rifabutin, fluoroquinolones, ofloxacin, sparfloxacin, rifampin, azithromycin, clarithromycin, dapsone, tetracycline, erythromycin, ciprofloxacin, doxycycline, ampicillin, amphotercin B, ketoconazole, fluconazole, pyrimethamine, sulfadiazine, clindamycin, lincomycin, pentamidine, atovaquone, paromomycin, diclazaril, acyclovir, trifluorouridine, foscarnet, penicillin, gentamicin, ganciclovir, itraconazole, miconazole, Zn-pyrithione, silver salts, chloride, bromide, iodide or and periodate.

24. (Currently Amended) The matrix of Claim 21, wherein the growth factor agents comprise basic fibroblast growth factor, acidic fibroblast growth factor, nerve growth factor, epidermal growth factor, insulin-like growth factors 1 and 2, platelet derived growth factor, tumor angiogenesis factor, vascular endothelial growth factor, corticotropin releasing factor, transforming growth factors  $\alpha$  and  $\beta$ , interleukin-8, granulocyte-macrophage colony stimulating factor, interleukins, or and interferons.

25. (Currently Amended) The matrix of Claim 21, wherein the mucopolysaccharides comprise heparin, heparin sulfate, heparinoids, dermatin sulfate, pentosan polysulfate, chondroitin sulfate, hyaluronic acid, cellulose, agarose, chitin, dextran, carrageenan, linoleic acid, or and allantoin.

26. (Currently Amended) The matrix of Claim 21, wherein the proteins comprise collagen, cross-linked collagen, fibronectin, laminin, elastin, or and cross-linked elastin.

27. (Currently Amended) The matrix of Claim 21, ~~further comprising adjuvants,~~ wherein the metals comprise zinc or and silver.

28. (Currently Amended) The ~~oxygen-delivery~~ matrix of Claim 1, wherein the ~~biocompatible~~ matrix comprises a stranded configuration.

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29. (Previously Presented) The matrix of Claim 27, wherein the polymer network comprises a natural or synthetic polymer.

30. (Currently Amended) The matrix of Claim ~~2~~28, wherein the polymer network comprises collagen, gelatin, chondritin, calmodulin, cellulose, agar, agarose, animal hide, hyaluronic acid, dextran, alginate, polylysine, resorbable polymers, polyacrylamide, polymethacrylate, polyacrylate, polybuterate, polyurethane foam, polyether, silastic, silicone elastomer, rubber, nylon, vinyl or and cross-linked dextran.

31. (Currently Amended) The matrix of Claim 1, further comprising a water loss control agent comprising petrolatum, glycolipids, ceramides, free fatty acids, cholesterol, triglycerides, sterylestes, cholesteryl sulfate, linoleic ethyl ester or and silicone oil.

32. (Currently Amended) The matrix of Claim 1, further comprising a plasticizer comprising glycerol, water, propylene glycol or and butanol.

33. (Currently Amended) The matrix of Claim 1, further comprising a hydration control agent comprising isopropyl alcohol, ethanol, glycerol, butanol, or and propylene glycol.

34. (New) The matrix of Claim 4, wherein the non-gellable polysaccharide is guar gum.

35. (New) The matrix of Claim 10, wherein the enzyme is catalase.

36. (New) The matrix of Claim 1, wherein the polymer network comprises collagen, gelatin, chondritin, calmodulin, cellulose, agar, agarose, animal hide, hyaluronic acid, dextran, alginate, polylysine, resorbable polymers, polyacrylamide, polymethacrylate, polyacrylate, polybuterate, polyurethane foam, polyether, silastic, silicone elastomer, rubber, nylon, vinyl or cross-linked dextran.